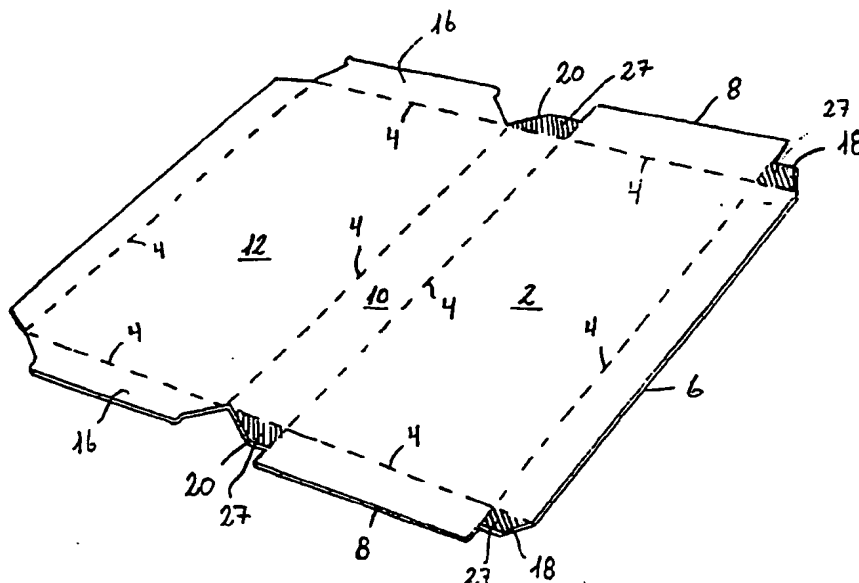




INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

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<p>(21) International Application Number: PCT/DK96/00335</p> <p>(22) International Filing Date: 5 August 1996 (05.08.96)</p> <p>(30) Priority Data: 0879/95 4 August 1995 (04.08.95) DK</p> <p>(71) Applicant (for all designated States except US): CARTOLIT APS [DK/DK]; P.O. Pedersens Vej 26, DK-8200 Århus N (DK).</p> <p>(72) Inventor; and (75) Inventor/Applicant (for US only): NIELSEN, Mogens [DK/DK]; Strandmarksvej 38, DK-8240 Risskov (DK).</p> <p>(74) Agent: K.SKØTT-JENSEN; Patentingeniører a/s, Lemmingvej 225, DK-8361 Hasselager (DK).</p>	<p>(81) Designated States: AL, AM, AT, AT (Utility model), AU, AZ, BB, BG, BR, BY, CA, CH, CN, CU, CZ, CZ (Utility model), DE, DE (Utility model), DK, DK (Utility model), EE, EE (Utility model), ES, FI, FI (Utility model), GB, GE, HU, IL, IS, JP, KE, KG, KP, KR, KZ, LK, LR, LS, LT, LU, LV, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SK (Utility model), TJ, TM, TR, TT, UA, UG, US, UZ, VN, ARIPO patent (KE, LS, MW, SD, SZ, UG), Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, CH, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, ML, MR, NE, SN, TD, TG).</p> <p>Published With international search report. In English translation (filed in Danish).</p>	

(54) Title: METHOD AND A BLOCK CARTON BLANK FOR THE LINING OF FREEZING FRAMES



(57) Abstract

When placing block carton linings in freezing frames it is important that the existing corner flaps (20, 27) on the carton insertion are placed externally on the adjoining side panels (8), so that they cannot be frozen when sticking into the material filled into the lined freezing frame. During a fast mounting of the block carton it may be difficult to perceive whether these corner flaps are placed inwardly or outwardly of the adjoining carton sides, since they visibly will become indistinguishable in relation to the surroundings. By the invention this will be changed, so that the inwardly facing sides of the corner flaps (20, 27) are made with a surface characteristic, e.g. a distinct signal colour, which is deviating in such a way from the outlook of the rest of the inside of the carton, that a faulty placing of the corner flaps will be discovered instantly by sight.

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Method and a Block Carton Blank for the Lining of Freezing Frames

The invention concerns a method in connection with mounting block cartons in freezing frames and a block carton blank suited for this purpose, and by the invention there is aimed at improving the certainty for a correct mounting of these cartons in the frames. The invention has close relation to the invention indicated in WO 96/02422 published on February 1, 1996, where reference is made to the problem indicated therein.

In short this concerns the use of the so-called block cartons for lining of freezing frames for receiving a fresh food material, e.g. of fish, which is desired to be frozen for creating an intermediate product in the shape of semi-sized, frozen blocks which are forwarded to factories for further processing. The block cartons are constituted of simple carton blanks, that are prepared with folding lines in such a way that they have a bottom panel corresponding to the size of the freezing frames and from this projecting side wall panels, which by the mounting of a carton blank in a freezing frame are naturally raised to upright positions along the inner sides of the frame. Normally, one of the longitudinal side panels are extended in a lid panel, which after the filling of the carton lining in the freezing frame may be swung inwardly over the filling, which in this way will be covered by carton on all side faces of the block. Thereafter the individual units are conveyed to freezing in a freezer of the shelf type, after which they may be knocked out of the freezing frames and stacked for shipment, presently with the carton wall panels as intermediate layers for preventing a total freezing together and besides that the carton blanks by themselves are totally stabilized by their freezing attachment to the frozen filling blocks. For the same reason the block cartons may be prepared without any special locking means in that they are supported and kept in place by their sideways abutment against the surrounding freezing frame and against a fixed bottom plate, respective-

ly, and partly by the block freezing itself. Thereby the block cartons only have a few main features in common with the more commonly known, self-supporting carton packings with corner flap locks and glue joints.

5 It is desirable that corner flap extensions appear in connection with the side wall panels of the block cartons, which may be swung outwardly or rather inwardly at the corners for creating a blocking against an instant liquid and material leakage from the filling material through the corners of the block carton raised in the freezing frame. It is
10 important that these corner flaps are folded inwardly to a position at the outside of the abutting side wall panel, in that a position at the inside may or will cause the corner flap to be more or less protruding into the frozen filling
15 material, which makes the further processing of it very difficult.

While it is described in the embodiment in WO 92/02422 how it may be detected by a preceding colour marking of parts of the carton blank whether the inwardly folded part are correctly placed as seen from the outside of the final product,
20 e.g. at the recipient of the products, the present invention focuses particularly on the discovery of faulty mountings even on the assembly stage.

On this stage it will apply, that the operator has a view
25 to the inner side of the mounted block carton and thereby he may also easily ascertain whether the corner flaps are correctly folded inwardly, that is to say that if they according to the present invention are made with an inwardly facing surface marking, that makes them visually different from the
30 inside of the adjoining side wall panels. Hereby the operator may readily perceive whether a corner flap is wrongly placed, so that this fault may be corrected already before the commencement of the filling of material to be frozen, i.e. by a primary control at the supplier.

35 This perception by the operator may principally be substituted by an automatic surveillance system, which optically inspects the internal outlook of the mounted block cartons and activates an alarm when internal corner areas with ap-

pearing fault indication markings are detected as an indication of corner flaps appearing at the inside and not at the outside in the raised carton lining.

The invention will be explained in the following with
5 reference to the drawing, where

Fig. 1 is an elevated perspective view of the inner side of a signal carton blank with corner flaps according to the invention, and

Fig. 2 is a perspective view of a not correctly situated
10 signal carton blank in a freezing frame.

Fig. 1 shows a perspective view of the inside of a carton blank corresponding to that described in WO 96/02422. As it appears from the figure the corner flaps 18, 20 are provided with markings 27, which in case of incorrect placing of the
15 carton blank as lining in a freezing frame 22 will be visible from the inside, compare fig. 2.

In case of correctly placed corner flaps 18, 20 on the outer side of the carton lining facing the freezing frame 22, the markings 27 will be covered by the raised side panels 8.

20 These markings can very well be used in addition to such markings, which according to WO 96/02422 are used for a corresponding external check of the finished block products.

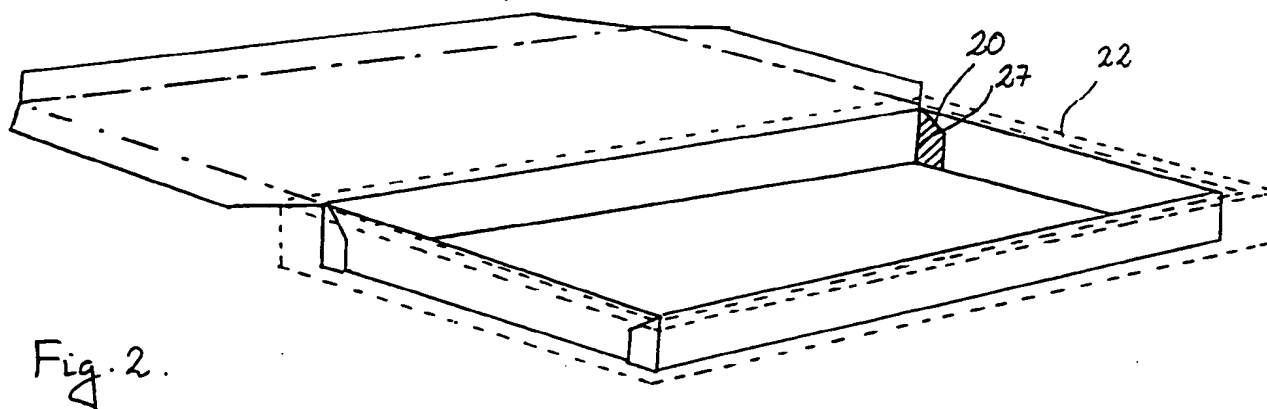
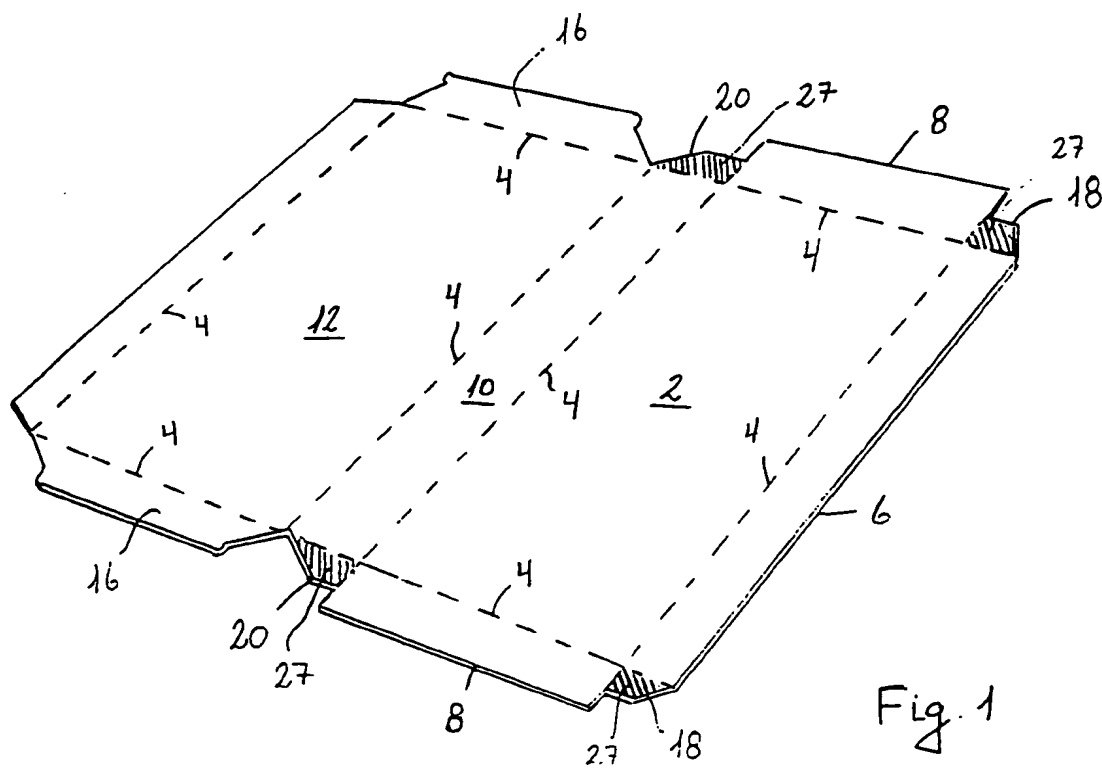
C L A I M S:

1. A method when mounting block carton blanks in freezing frames, whereby in the freezing frame there is placed a lining carton blank with a bottom panel (2) and therefrom upwardly projecting side wall panels of which some have endwise projecting corner flaps, which are folded inwardly for placing along an end area of an adjoining side wall panel, characterized in that by the mounting there is used carton blanks which on the inside of the corner flaps are designed with a surface characteristic such as a clear signal colour, which distinctly deviates from the outlook of the rest of the surface of the carton's inside, and that before filling of freeze material into the carton it is detected visually or in an optical way, if at any corner a wrongly placed corner flap appears visible on the inwardly facing side of the blank.

2. A block carton for lining a freezing frame by the method according to claim 1 and of the type which have a bottom panel (2) bordered by folding lines (4), outside which lines the said panel is continued in raisable side panels (6,8,10), whereof some have corner flap parts (18,20) for folding inwardly at the corners of the carton blank raised in the freezing frame, characterized in that the said corner flaps on their inwardly facing side appear with a marking, which in an easily visible way distinguishes these inwardly facing sides from the visual impression of the inwardly facing sides of the other side forming parts (6,8,10), all in such a way that by putting the block carton into the freezing frame it may easily be ascertained visually, whether the corner flaps are placed outwardly or inwardly in relation to the raised side panels of the carton.

3. Block carton according to claim 2, characterized in that the inwardly facing sides of the side forming parts (6,8,10) appear with the same surface outlook as the rest of the block carton, while the inwardly facing sides of the corner flaps are made with a visually deviating marking therefrom, e.g. another colour.

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INTERNATIONAL SEARCH REPORT

International application No.

PCT/DK 96/00335

A. CLASSIFICATION OF SUBJECT MATTER

IPC6: B65B 57/02

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

IPC6: B65B, B65D

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

SE,DK,FI,NO classes as above

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X,P	WO 9602422 A1 (CARTOLIT APS), 1 February 1996 (01.02.96), figure 1, abstract --	1-3
A	US 4684023 A (CORTOPASSI), 4 August 1987 (04.08.87), figure 2, abstract --	1-3
A	US 5103979 A (HUSTAD), 14 April 1992 (14.04.92), abstract -----	1-3

☐ Further documents are listed in the continuation of Box C.☒ See patent family annex.

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INTERNATIONAL SEARCH REPORT

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Patent document cited in search report	Publication date	Patent family member(s)	Publication date
WO-A1- 9602422	01/02/96	AU-A- 2977195 DK-A- 85894	16/02/96 20/01/96
US-A- 4684023	04/08/87	US-E- RE33979	30/06/92
US-A- 5103979	14/04/92	CA-A- 2025284 EP-A- 0422847 JP-A- 3176366	12/04/91 17/04/91 31/07/91

